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09/909,809	07/23/2001	Mayumi Tomikawa	522.1921D3	6031

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EXAMINER

DEJONG, ERIC S

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,809

Applicant(s)

TOMIKAWA ET AL.

Examiner

Eric S. DeJong

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16, 17 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16, 17, and 23-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED OFFICE ACTION

Claim Rejections - 35 USC § 101

The rejection of claims 16, 17, and 23-25 are withdrawn in view of amendments made to the instant claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16, 17, and 23-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "RMSD" in claims 16, 23, and 24 is used by the claim to mean "root mean square distance", while the accepted meaning is "root mean square deviation." The term "RMSD" is indefinite because the instant specification does not clearly redefine the term. It is acknowledged that the instant specification page 4, lines 27-30 states:

Art Unit: 1631

"When the researcher searches the similar three-dimensional, structure, an r.m.s.d. (root mean square distance) value is used as a scale of the similarity of the three-dimensional structures of the substances."

However, this teaching from the instant disclosure conflicts with the equation (1) provided page 5, lines 20-23 of the instant specification as it sets forth an equation for determining root mean square deviation. As such, applicants have not clearly redefined the claim term RMSD as a "root mean square distance" and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term.

Claims 16, 23, and 24 each recite the limitation of "a first probe structure expressed by three-dimensional coordinates of elements belonging to a first probe subset of a plurality of subsets of secondary structure of probe structures, the first subset comprising a first point set of an amino acid sequence or a motif database" (see for example lines 3-6 of claim 16). In the above cited limitation, the recitation of "a first probe subset of a plurality of subsets of secondary probe structures" is initially unclear because the instant claims do not define an initial set from which the subsets are determined from. As such, is unclear what the instantly claimed "subsets" are subsets of. Further, it is unclear in the above cited limitation as to what relationship the "first probe structure" has with probe structures recited in "a plurality of subsets of secondary probe structures". For example, it is unclear if the "secondary probe structures" are intended to be functionally related to "the first probe structure" as in the case of a specific protein from within a generic family of proteins (ex: cytochrome c3 is a specific

Art Unit: 1631

protein from within a family of cytochrome proteins) or, alternatively, if the “secondary probe structures” are intended to encompass the three dimensional structures of secondary structural motifs (such as alpha helices and beta sheets) that are components of a parent “first probe structure”. It is further unclear from the above cited limitation what information is intended to be included in “a first point set of an amino acid sequence database or motif database”. For example, it is unclear if applicants intend a “first point set” to be a collection of atomic coordinates for atoms within amino acid sequence, a collection of node positions that are used in constructing a first tree structure, or, alternatively, encompass more abstract structural constructs such as an averaged/localized positions of protein-ligand binding sites or catalytic protein domains present in the first probe structure.

Similarly, claims 16, 23, and 24 each have been amended to recite the limitation of “a target structure expressed by three-dimensional coordinates of elements belonging to a second subset of a plurality of subsets of secondary structures of the target structure, the second subset comprising a second point set of an input amino acid sequence of the target structure” (see for example lines 6-9 of claim 16). In the above cited limitation, the recitation of “a second subset of a plurality of subsets of secondary of the target structure” is unclear because the instant claims do not define an initial set from which the subsets are determined from. As such, is unclear what the instantly claimed “subsets” are subsets of. It is further unclear from the above cited limitation what information is intended to be included in “a second point set of an input amino acid

Art Unit: 1631

sequence of the target structure". For example, it is unclear if applicants intend a "second point set" to be a collection of atomic coordinates for atoms within amino acids, a collection of node positions that are used in constructing a second tree structure, or, alternatively, encompass more abstract structural constructs such as an averaged/localized positions of protein-ligand binding sites or catalytic protein domains present in a target structure.

Claims 16, 23, and 24 each recite the limitation of "dividing the second target structure into a plurality of second subsets based on secondary structures of the three-dimensional coordinates of the target structure" (in lines 10 and 11 of claim 16). It is unclear from the instant claim how the resultant "plurality of second subsets" differs from the previously defined "second subset of a plurality of subsets of secondary structures of the target structure" as previously recited in the instant claims (see for example lines 7 and 8 of claim 16) or if the claimed step drawn to "dividing the second target structure into a plurality of subsets" results in the generation of a distinct set of subset structures. Further, in light of the amendments made to the instant claims, the limitation of "the second structure" now lacks antecedent basis in the claim. For the purpose of continuing examination, the limitation of "the second structure" (see for example line 10 of claim 16) refers only to the previous recitation of "a target structure" (see for example line 6 of claim 16).

Art Unit: 1631

Claims 16, 23, and 24 each recite a step drawn to determining whether a correspondence is present between the first point set and the second point set by generating (i) generating a first tree structure for the first point set and a second tree structure for the second point set, (ii) pruning the second tree structure for the second point set, (iii) determining whether the first point set and the second point set have a same attribute, and (iv), if the first point set and the second point set have a same attribute, generating a correspondence between the first point set and the second point set (see for example lines 15-29 of claim 16). These steps are initially unclear because it cannot be ascertained what kind of attributes can be associated to a first or second point set, as the claims fail to specify what information is encompassed by either a first or second point set. Further, the instant claims do not define what an "attribute" is intended to encompass. For example, it is unclear if applicants intend that an attribute associated with a given point set reads on biological characteristics (such a structural motif, a ligand binding site, or a catalytic function) or, alternatively, that an attribute associated with a given point set reads on structural similarities between a given set of atomic coordinates. Further, as claimed the step of "determining whether a correspondence is present between the first point set of the probe structure and the second point set of the plurality of second subsets of the target structure" (see for example lines 19-17 of claim 16) is ultimately determined by "generating a correspondence between a first point set of the probe structure and the second point set of the plurality of second subsets of the target structure" (see for example lines 27-29 of claim 16). As such, the claim fails to delineate any positive steps that results in

Art Unit: 1631

generating a correspondence. Additionally, it is unclear from the instant claims how the steps drawn to generating and pruning a first and a second tree structure is related to generating correspondences between a first and second point set.

Claims 16, 23, and 24 each recite the limitation of “calculating a root mean square distance (RMSD) between elements corresponding in the first point set of the probe structure and the second point set of the plurality of second subsets of the target structure to automatically determine a distance between the elements of the first point set and the elements of a second point set”. The instant limitation is vague and indefinite as it is uncertain what information is included in either a first or second point set. The indefiniteness issue is further compounded because it is unclear what the scope of an “element” from a “point set” is intended to encompass, and as such it is unclear what information is being relied upon in performing an RMSD calculation. Further, as noted above, the term RMSD in the art of structural biology refers to a calculated root mean square deviation that quantifies the variability between a set of at least two or more structures, and as such does not result in any determination of a actual distance between corresponding elements from a first point set and a second point set.

Claims 16, 23, and 24 each recite the limitation of “a predetermined threshold value” (see for example lines 40 and 41 of claim 16). This limitation is unclear as the

Art Unit: 1631

instant claims do not set forth what “a predetermined threshold value” is predetermined with respect to.

Claims 16, 23, and 24 each recite the limitation of “a character sequence expressing the input amino acid sequence” (see for example lines 45 and 46 of claim 16) and “a character sequence expressing the amino acid sequence” (see for example lines 46 and 47 of claim 16). It is unclear from the instant limitations if “a character sequence expressing” an amino acid sequence is directed to a DNA sequence that expresses an amino acid product in the context of biological transcription and translation, or alternatively, if a “character sequence expressing” an amino acid sequence is directed to a three dimensional structure of an amino acid sequence, such as a probe structure expressed by three-dimensional structure coordinates (see for example, line 3 of claim 16).

Claims 17 and 25 are also included under the above rejections due to their dependence from either of claims 16 or 24.

Double Patenting

Regarding use of the specification in obviousness-type double patenting rejections, the MPEP states in section 804:

When considering whether the invention defined in a claim of an application is an obvious variation of the invention defined in the claim of a patent, the disclosure of the patent may not be used as prior art. This does not mean that one is precluded from all use of the patent disclosure.

Art Unit: 1631

The specification can always be used as a dictionary to learn the meaning of a term in the patent claim. In re Boylan, 392 F.2d 1017, 157 USPQ 370 (CCPA 1968). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in the application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 441-42, 164 USPQ 619, 622 (CCPA 1970). The court in Vogel recognized "that it is most difficult, if not meaningless, to try to say what is or is not an obvious variation of a claim," but that one can judge whether or not the invention claimed in an application is an obvious variation of an embodiment disclosed in the patent which provides support for the patent claim. According to the court, one must first "determine how much of the patent disclosure pertains to the invention claimed in the patent" because only "[t]his portion of the specification supports the patent claims and may be considered." The court pointed out that "this use of the disclosure is not in contravention of the cases forbidding its use as prior art, nor is it applying the patent as a reference under 35 U.S.C. 103, since only the disclosure of the invention claimed in the patent may be examined."

Claims 16, 17 and 23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of copending Application No. 09/910,071. Although the conflicting claims are not identical, they are not patentably distinct from each other because copending claim 13 recites a generic method for analyzing three dimensional structures comprising dividing point sets from three dimensional coordinates, generating a combination of correspondence, and

Art Unit: 1631

calculating a root mean square distance, as instantly claimed. The instant claims are more narrowly drawn to further generating a first and second tree structure, pruning the second tree structure, and determining the optimum correspondence between the elements. However, the disclosure of copending application No. 09/910,071 teaches a preferred embodiment of the generic method which further comprises the steps of generating a first and second tree structure, pruning the second tree structure, and determining the optimum correspondence between the elements (see the specification of copending application No. 09/910,071, pages 8 line 21 through page 9, line 19 and page 54, line 13 through page 55, line 7).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicant's arguments filed 09/11/2006 have been fully considered but they are not persuasive.

In regards to the rejection of claims 16, 17, and 23-25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite, applicants argue that the meaning of the term r.m.s.d and R.M.S.D. is clear and definite to one of skill in the art and that the instant claims are patentable under 35 USC § 112, second paragraph. Applicants further point to a definition of Root-mean-square distance that is commonly used scientific measure provided at csse.monash.edu.au/hons/projects/2000/Edmund.Lam/

Art Unit: 1631

thesis/node31.html as support.

In response, it is first noted that the definition of root-mean-square distance relied upon by applicants is not set forth in the instant disclosure and the web site referred to by applicants has not been listed in an IDS for the instant application nor has a publication date provided for this citation. Further, the equation 60 cited on page 10 line 1 of applicants response is a generic formula used in determining a root-mean square. The statistical quantity of a root-mean-square is distinct from the statistical quantity of a root-means-square deviation used in determining the variation of one or more three dimensional structures when compared to a standard or averaged reference structure. Further, the statistical quantity of a root-means-square deviation does not result in the determination of a distance, *per se*, but rather quantifies an overall deviation in a given set of three-dimensional structure from a standard or averaged reference structure. Therefore, neither applicants have not clearly redefined the claim term RMSD as a "root mean square distance" and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term as a root mean square deviation. It is further noted that the instant claims (see for example claim 16, lines 27-30) recite the determination of a distance, *per se*, between elements of a first point set and a second point set, which is not provided from calculation the root-mean-square deviation of three-dimensional structures.

In regards to the terminology of "a first probe structure expressed by the three-dimensional coordinates of elements belonging to a first probe subset of a plurality of

Art Unit: 1631

subsets of a secondary structure of probe structures, the first subset comprising a first point set of an amino acid sequence or a motif database”, applicants argue that the meaning of this terminology is clear to one of skill in the art. Applicants further cite pages 52 and 56 as containing examples describing the instantly claimed limitation and of the term “subsets”.

In response to applicant's argument, it is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the instant case, applicants citation of exemplary embodiments on pages 52-56 of the instant specification does not provide a definition for limitations recited in the claims. Further, applicants arguments do not address the following merits of the basis of the rejection: (i) the recitation of “a first probe subset of a plurality of subsets of secondary probe structures” is initially unclear because the instant claims do not define an initial set from which the subsets are determined from, (ii) it is unclear in the above cited limitation as to what relationship the “first probe structure” has with probe structures recited in “a plurality of subsets of secondary probe structures”, and (iii) it is further unclear from the above cited limitation what information is intended to be included in “a first point set of an amino acid sequence database or motif database”.

In regards to the terminology of “a target structure expressed by three-dimensional coordinates of elements belonging to a second subset of a plurality of subsets of secondary structures of the target structure, the second subset comprising a

Art Unit: 1631

second point set of an input amino acid sequence of the target structure", applicants argue that the meaning of the claimed terminology is clear to one of skill in the art.

In response, it is noted that applicants response and the amendment to the instant claims so as to recite "target structure" do not address the merits set forth as the basis of the rejection. The recitation of "a second subset of a plurality of subsets of secondary of the target structure" is unclear because the instant claims do not define an initial set from which the subsets are determined from. As such, is unclear what the instantly claimed "subsets" are subsets of. It is further unclear from the above cited limitation what information is intended to be included in "a second point set of an input amino acid sequence of the target structure". For example, it is unclear if applicants intend a "second point set" to be a collection of atomic coordinates for atoms within amino acids, a collection of node positions that are used in constructing a second tree structure, or, alternatively, encompass more abstract structural constructs such as an averaged/localized positions of protein-ligand binding sites or catalytic protein domains present in a target structure.

In regards to the terminology of "dividing the second target structure into a plurality of second subsets based on secondary structures of the three-dimensional coordinates of the target structure", applicants argue that the meaning of the claimed terminology is clear to one of skill in the art.

In response, it is noted that applicants response does not address the merits that set forth the basis of the instant rejection. Specifically, it is unclear from the instant claim

how the resultant “plurality of second subsets” differs from the previously defined “second subset of a plurality of subsets of secondary structures of the target structure” as previously recited in the instant claims (see for example lines 7 and 8 of claim 16) or if the claimed step drawn to “dividing the second target structure into a plurality of subsets” results in the generation of a distinct set of subset structures.

In regards to the recitation in claims 16, 23, and 24 of a step drawn to determining whether a correspondence is present between the first point set and the second point set by generating (i) generating a first tree structure for the first point set and a second tree structure for the second point set, (ii) pruning the second tree structure for the second point set, (iii) determining whether the first point set and the second point set have a same attribute, and (iv), if the first point set and the second point set have a same attribute, generating a correspondence between the first point set and the second point set (see for example lines 15-29 of claim 16), applicants argue that pages 4-6 of the instant specification defines the term “attribute” and further argue the above cited step of a step drawn to “determining whether a correspondence is present between the first point set and the second point” is clear and definite to one skilled in the art.

In response to applicant's argument, it is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the instant case, applicants citation of exemplary embodiments on pages 4-6 of the

Art Unit: 1631

instant specification does not provide a definition for limitations recited in the claims.

Further, applicants arguments do not address the following merits that form the basis of the rejection: (i) these steps are initially unclear because it cannot be ascertained what kind of attributes can be associated to a first or second point set, as the claims fail to specify what information is encompassed by either a first or second point set, (ii) the instant claims do not define what the term "attribute" nor it's intended scope (for example, it is unclear if claimed attributes associated with a given point set reads on biological characteristics (such a structural motif, a ligand binding site, or a catalytic function) or, alternatively, that an attribute associated with a given point set reads on structural similarities between a given set of atomic coordinates), (iii) as claimed the step of "determining whether a correspondence is present between the first point set of the probe structure and the second point set of the plurality of second subsets of the target structure" (see for example lines 19-17 of claim 16) is ultimately determined by "generating a correspondence between a first point set of the probe structure and the second point set of the plurality of second subsets of the target structure" (see for example lines 27-29 of claim 16), however the claim fails to recite any positive steps that results in generating a correspondence, and (iv) it is unclear from the instant claims how the steps drawn to generating and pruning a first and a second tree structure is related to the generation of correspondences between a first and second point set.

In regards to claims 16, 23, and 24 that recite the limitation of "calculating a root mean square distance (RMSD) between elements corresponding in the first point set of

Art Unit: 1631

the probe structure and the second point set of the plurality of second subsets of the target structure to automatically determine a distance between the elements of the first point set and the elements of a second point set”, applicants argue that the claimed terminology is clear to one of skill in the art and that the term “element” refers to elements constituting the substance. Applicants further cite page 5 of the instant specification as support.

In response to applicant's argument, it is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the instant case, applicants citation of exemplary embodiments on pages 5 of the instant specification does not provide a definition for limitations recited in the claims. Further, applicants arguments do not address the following merits set forth as the basis of the instant rejection reiterated below. The above cited limitation is vague and indefinite as it is uncertain what information is included in either a first or second point set. The indefiniteness issue is further compounded because it is unclear what the scope of an “element” from a “point set” is intended to encompass, and as such it is unclear what information is being relied upon in performing an RMSD calculation. Further, as noted above, the term RMSD in the art of structural biology refers to a calculated root mean square deviation that quantifies the variability between a set of at least two or more structures, and as such does not result in any determination of a actual distance between corresponding elements from a first point set and a second point set.

In regards to claims 16, 23, and 24 that recite the limitation of "a predetermined threshold value", applicants argue that page 31, lines 17-29 and pages 35, line 31 through page 37, line 19 of the instant specification describe the determination of "a predetermined threshold value".

In response to applicant's argument, it is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the instant case, applicants citation of exemplary embodiments on pages 31 and 35-37 of the instant specification do not provide any definition for limitations recited in the claims. Further, applicants arguments do not address the merits that form the basis of the instant rejection. The metes and bounds of the instant claims are still unclear as neither the claims nor the instant disclosure do not set forth a definition that specifies what "a predetermined threshold value" is predetermined with respect to.

In regards to claims 16, 23, and 24 that recite the limitation of "a character sequence expressing the input amino acid sequence" and " a character sequence expressing the amino acid sequence", applicants argue that page 17, line 33 through page 18, line 20 of the instant specification sets forth a description of the above claimed terminology such that the meaning is clear to one of skill in the art.

In response to applicant's argument, it is noted that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In

Art Unit: 1631

the instant case, applicants citation of exemplary embodiments on page 17, line 33 through page 18, line 20 do not provide any definition for limitations recited in the claims. Further, applicants arguments do not address the merits that form the basis of the instant rejection. The instant claims remain indefinite because it is unclear if "a character sequence expressing" an amino acid sequence is directed to a DNA sequence that expresses an amino acid product in the context of biological transcription and translation, or alternatively, if a "character sequence expressing" an amino acid sequence is directed to a three dimensional structure of an amino acid sequence, such as a probe structure expressed by three-dimensional structure coordinates.

In regards to the provisional rejection of claims 16, 17 and 23 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 13 of copending Application No. 09/910,071, applicants requested that the provisional rejection of claims on the ground of nonstatutory obviousness-type double patenting be held in abeyance until the remaining rejections are resolved or upon allowance Application No. 09/910,071.

In response, it is noted neither the instant claims nor claim 13 of copending Application No. 09/910,071 have been amended to resolve the instant grounds set forth in the above cited provisional rejection. Therefore, the provisional rejection of claims 16, 17 and 23 is maintained for the reasons of record.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

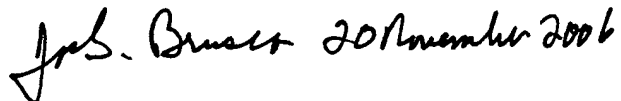
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric S. DeJong whose telephone number is (571) 272-6099. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1631

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EDJ



JOHN S. BRUSCA, PH.D
PRIMARY EXAMINER